

ABSTRACT OF THE DISCLOSURE

5 An adaptive interference canceller for canceling an interfering signal corresponding
to a delayed, frequency translated, amplitude and phase offset version of a transmitted signal
contained in a composite received signal relayed through a relay system such as a satellite
transponder. The canceller digitally downconverts the received signal and a local replica of
the transmitted signal from IF to baseband, applies a variable delay and frequency
10 compensation to the replica as a coarse delay and frequency correction, and tracks fine
delay, amplitude and phase differences using an adaptive finite impulse response filter to
generate a cancellation signal corresponding to the delayed and frequency shifted version.
A minimum output power process produces an error signal that drives the variable delay and
adaptive filter to minimize the power in the signal of interest to maximize cancellation of the
15 interfering signal.

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